Complete Summary

GUIDELINE TITLE

Guidelines for the treatment and management of acute bacterial conjunctivitis in children and adults.

BIBLIOGRAPHIC SOURCE(S)

University of Texas, School of Nursing, Family Nurse Practitioner Program. Guidelines for the treatment and management of acute bacterial conjunctivitis in children and adults. Austin (TX): University of Texas, School of Nursing; 2005 May. 21 p. [24 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Acute bacterial conjunctivitis (non-hyperacute) in children and adults

Note: Conjunctivitis may be defined as any inflammation of the conjunctiva. The inflammation can be characterized by itching, tearing, discharge, irritation, or a foreign body sensation. Acute bacterial conjunctivitis is usually characterized by a mucopurulent discharge, conjunctival injection, hyperemia, and morning matting of the eyelashes.

GUIDELINE CATEGORY

Diagnosis
Evaluation

Management
Prevention
Treatment

CLINICAL SPECIALTY

Family Practice
Ophthalmology
Optometry
Pediatrics

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Nurses
Patients
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To facilitate the identification of the populations at risk for acute bacterial conjunctivitis
- To facilitate accurate diagnosis, treatment, and management of acute bacterial conjunctivitis
- To limit complications associated with acute bacterial conjunctivitis
- To improve the use of appropriate referral criteria
- To improve patient or parental education and facilitate involvement in decision-making regarding the management of acute bacterial conjunctivitis

TARGET POPULATION

Children and adults with diagnosed or symptoms suggestive of acute bacterial conjunctivitis

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Evaluation

1. Patient history
    - History of present illness
    - Past medical history
    - Medication history
    - Family medical history
    - Psychosocial history
    - Dietary history
2. Physical examination
3. Diagnostic tests (resistant or recurrent infections)
    - Cultures
    - Smears

- Scrapings
- Conjunctival biopsy

Management/Treatment/Prevention

Prevention of Acute Bacterial Conjunctivitis

1. Patient education on disease transmission
2. Informing patient of the need for frequent hand washing and good hygiene

Pharmacological Therapy to Treat Acute Bacterial Conjunctivitis

1. Topical antibiotic therapy
    - Norfloxacin 0.3%
    - Ciprofloxacin 0.3%
    - Ofloxacin 0.3%
    - Levofloxacin 0.5%
    - Lomefloxacin 0.3%
    - Moxifloxacin 0.5%
    - Gatifloxacin 0.3%
    - Chloramphenicol 0.5%
    - Sulfacetamide Sodium 10%
    - Erythromycin 0.5%
    - Gentamicin Sulfate 0.3%
    - Trimethoprim Sulfate-Polymyxin B 10,000 U/1 mg/mL
    - Fusidic acid 0.1%
    - Tobramycin 0.3%
    - Povidone-iodine 1.25%
    - Bacitracin ointment
2. Ocular steroids and steroid-antibiotic
    - Prednisolone (Pred Forte)
    - Fluorometholone 0.1%, sulfacetamide sodium 10% (FML-S)
    - Fluorometholone 0.1% (FML)
    - Neomycin, polymyxin B, dexamethasone 0.1% (Maxitrol)
    - Gentamicin 0.3%, prednisolone acetate 0.1% (Pred-G)
    - Tobramycin 0.3%, dexamethasone 0.1% (Tobradex)

General Management Principles

1. Patient education and counseling
2. Follow-up laboratory evaluation of cultures and smears
3. Referral to ophthalmologist as indicated for persistent or recurrent infections

MAJOR OUTCOMES CONSIDERED

- Duration of signs and symptoms of bacterial conjunctivitis
- Clinical cure rate
- Risk of disease recurrence
- Vision loss
- Incidence of adverse effects of medications

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

To select evidence for critical appraisal by the group, the citations in the Clinical Guidelines in Family Practice for acute bacterial conjunctivitis were reviewed.

Additionally, the Medline, Embase, and the Cochrane databases were searched for dates January 1998 through January 2005. Medical Subject headings (MeSH) were employed using ScienceDirect, UpToDate, and OVID Medline interface searching bacterial conjunctivitis in the title, abstract, and indexing forms. Additional resources were found using bibliographies of relevant articles.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Quality of Evidence

I: Evidence obtained from at least one properly randomized-controlled trial

II-1: Evidence obtained from well-designed controlled trials without randomization

II-2: Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group

III: Opinions of respected authorities, based on clinical experience; descriptive studies and case reports; or reports of expert committees

IV: Evidence obtained from expert committee reports or opinions and/or clinical experience of respected authorities

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus
Informal Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Review of the literature with group consensus. Consideration was given to patient preferences and length of treatment. Guidelines were drafted by graduate students following review of the literature.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Strength of Recommendations

A. There is good evidence to support the recommendation that the treatment be specifically considered in the management of acute bacterial conjunctivitis.
B. There is fair evidence to support the recommendation that the treatment be specifically considered in the management of acute bacterial conjunctivitis.
C. There is insufficient evidence to recommend for or against the inclusion of the treatment in the management of acute bacterial conjunctivitis, but recommendations may be made on other grounds
D. There is fair evidence to support the recommendation that the treatment be excluded from consideration in the management of acute bacterial conjunctivitis.
E. There is good evidence to support the recommendation that the treatment be excluded from consideration in the management of acute bacterial conjunctivitis.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

A group of Family Nurse Practitioner students developed a draft which was submitted to the University of Texas at Austin School of Nursing faculty for review. The draft was later revised to incorporate faculty recommendations.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Quality of evidence (I, II-1, II-2, III, and IV) and recommendation grades (A-C) are defined at the end of the "Major Recommendations" field.

1. A comprehensive history of presenting symptoms should include onset of symptoms, duration, recent exposure to individuals with "pink eye," unilateral or bilateral presentation, development and type of discharge, matting of eyelashes particularly in the morning, and the presence or absence of ocular pain, blurred vision, or photophobia (Brook, 2002; British United Provident Association [BUPA], 2004; Burns et al., 2004; Editorial Board, 2004; Gross, 2002; Morrow & Abbott, 1998; Uphold & Graham, 2003).
2. The past medical history and family medical history should elicit any treated or untreated cases of acute bacterial conjunctivitis in the individual or family members. Additionally, current medications, the presence of systemic disease, contact lens use, tobacco exposure, social support, medication compliance, trauma, travel, occupation, hobbies, and drug allergies should be noted. (Brook, 2002; Burns et al., 2004; Editorial Board, 2004; Gross, 2002; Mather et al., 2002; Morrow & Abbott, 1998; Uphold & Graham, 2003).
3. Diagnostic tests are not generally indicated for uncomplicated cases. Cultures, smears, scrapings, and conjunctival biopsy are warranted with resistant or recurrent infections (Burns et al., 2004; Mather et al., 2002; Uphold & Graham, 2003).
4. Acute bacterial conjunctivitis may be prevented with meticulous hand washing and good hygiene. Patients should be advised to avoid sharing eye drops, towels, washcloths, makeup, and pillows (strength of recommendation A; quality of evidence III). (Brook, 2002; BUPA, 2004; Burns et al., 2004; Editorial Board, 2004; Gross, 2002; Mather et al., 2002; Morrow & Abbott, 1998; Strauss, 2003; Uphold & Graham, 2003).
5. Multiple randomized, controlled studies comparing different topical antibiotics versus each other (Norfloxacin 0.3%; Ciprofloxacin 0.3%; Ofloxacin 0.3%; Lomefloxacin 0.3%; Levofloxacin 0.5 %; Chloramphenicol 0.5 %; Sulfacetamide Sodium 10%; Erythromycin 5mg/g; Gentamicin Sulfate 0.3%; Trimethoprim Sulfate-Polymyxin B 10,000 U/1mg/1ml; Fusidic acid 0.1%; and Tobramycin 0.3%) found no significant difference in the rates of clinical or microbial cure (strength of recommendation A; quality of evidence I) . (Carr, 1998; Hwang et al., 2003; Isenberg et al., 2002; Jackson et al., 2002; Jauch, Fsadni, & Gamba, 1999; Kettenmeyer et al., 1998; Lichtenstein & Rinehart, 2004; Mather et al., 2002; Montero et al., 1998; Schwab et al., 2003).
6. Fourth generation fluoroquinolones (Moxifloxacin and Gatifloxacin) have demonstrated through an in vitro study to overcome resistance to staphylococcal organisms that have displayed resistance to second- and third-generation fluoroquinolones, namely ciprofloxacin, ofloxacin, and levofloxacin (strength of recommendation A; quality of evidence II-2). (Marlin, 2003).
7. One randomized controlled study reported that the administration of topical tobramycin was rated more convenient than fusidic acid which accounted for greater treatment adherence among patients (strength of recommendation A; quality of evidence I). (Jackson et al., 2002).

8. A controlled trial of povidone-iodine ophthalmic solution in pediatric patients was determined to be just as effective as neomycin-polymyxin B gramicidin for treating bacterial conjunctivitis. Because povidone-iodine ophthalmic solution can be prepared from a powder, it is inexpensive. Additionally, the solution is widely available in underdeveloped countries (strength of recommendation A; quality of evidence II-1). (Isenberg et al., 2002)
9. Although most cases of bacterial conjunctivitis are self-limiting, the addition of steroids with antibiotic treatment can lessen the patients' inflammation and duration of disease. The practitioner must distinguish between viral, hyperacute and bacterial conjunctivitis before prescribing topical steroids to prevent further damage (strength of recommendation B; quality of evidence III). (Isenberg et al., 2002; Sowka, Gurwood, & Kabat, 2000).
10. The patient and family should be educated regarding the highly contagious nature of acute bacterial conjunctivitis. Counseling should include the proper technique for cleansing the affected eye(s): wiping the eye(s) from the inner canthus outward using a single tissue/cotton ball. The tissue/cotton ball should then be discarded. The eyelashes should be cleansed several times a day with a weak solution of no-tears baby shampoo and warm water. The patient or parent should be instructed in the proper administration of ophthalmologic ointments and drops. The prescription ophthalmic solution or ointment should be instilled into the lower conjunctival sac. The patient or family should be counseled regarding the expected length of time the therapy should continue (strength of recommendation A; quality of evidence III). (Burns et al., 2004; Editorial Board, 2004; Gross, 2002; Morrow & Abbott, 1998; Uphold & Graham, 2003).
11. The patient with acute bacterial conjunctivitis should be referred to a specialist should there be no improvement within the first 24 hours after initiating therapy or should the patient develop moderate to severe ocular pain, develops severe purulent discharge, if there is diminished visual acuity or loss of vision, when conjunctivitis is associated with a sexually transmitted disease, or when infection proves to be resistant to conventional antibiotic therapy (strength of recommendation A; quality of evidence III). (Burns et al., 2004; Editorial Board, 2004; Gross, 2002; Jacobs, 2005; Mather et al., 2002; Morrow & Abbott, 1998; Uphold & Graham, 2003).
12. Antibiotics will do nothing to suppress any concurrent inflammation noted. If there is no significant corneal disruption and no contraindications exist, it is suggested that a steroid be prescribed such as Pred Forte, FML-S, or FML along with the antibiotic chosen, or a steroid-antibiotic combination such as Maxitrol (neomycin, polymyxin B, dexamethasone 0.1%), Pred-G (gentamicin 0.3%, prednisolone acetate 0.1%), or Tobradex (tobramycin 0.3%, dexamethasone 0.1%). (Sowka, Gurwood, & Kabat, 2000).

Refer to Appendix A of the original guideline document for a list of commonly used antimicrobial agents in the treatment of acute bacterial conjunctivitis along with their dosing regimens and spectrum of activity.

Definitions:

Quality of Evidence

I: Evidence obtained from at least one properly randomized-controlled trial

II-1: Evidence obtained from well-designed controlled trials without randomization

II-2: Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group

II-3: Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940s) could be regarded as this type of evidence

III: Opinions of respected authorities, based on clinical experience; descriptive studies and case reports; or reports of expert committees

IV: Evidence obtained from expert committee reports or opinions and/or clinical experience of respected authorities

Strength of Recommendations

A. There is good evidence to support the recommendation that the treatment be specifically considered in the management of acute bacterial conjunctivitis.
B. There is fair evidence to support the recommendation that the treatment be specifically considered in the management of acute bacterial conjunctivitis.
C. There is insufficient evidence to recommend for or against the inclusion of the treatment in the management of acute bacterial conjunctivitis, but recommendations may be made on other grounds
D. There is fair evidence to support the recommendation that the treatment be excluded from consideration in the management of acute bacterial conjunctivitis.
E. There is good evidence to support the recommendation that the treatment be excluded from consideration in the management of acute bacterial conjunctivitis.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence is identified and graded for selected recommendations (see "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Increased patient comfort, decreased spread of infection, and decreased duration of symptoms/infection with appropriate medical management of bacterial conjunctivitis in children and adults.
- Reduction in rate of complications from bacterial conjunctivitis
- Improved identification of the at risk population
- Improved use of appropriate referral criteria
- Improved patient/parental involvement in decision-making related to the management of bacterial conjunctivitis

POTENTIAL HARMS

- Localized burning or irritation at site of antibiotic application
- Sensitivity reaction
- Potential for anaphylactic reaction secondary to antibiotic sensitivity
- Rare potential for development of aplastic anemia with Chloramphenicol 0.1% use

CONTRAINDICATIONS

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Known antibiotic sensitivities

QUALIFYING STATEMENTS

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- This guideline is limited to topical treatment recommendations for non-gonococcal, non-chlamydial bacterial conjunctivitis in children and adults.
- Comparisons between antimicrobial treatment duration and dosing regimens were not considered in making the management recommendations.
- The trials reviewed included both children and adults but the ratio of children to adults was usually not indicated.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

University of Texas, School of Nursing, Family Nurse Practitioner Program. Guidelines for the treatment and management of acute bacterial conjunctivitis in children and adults. Austin (TX): University of Texas, School of Nursing; 2005 May. 21 p. [24 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2005 May

GUIDELINE DEVELOPER(S)

University of Texas at Austin School of Nursing, Family Nurse Practitioner Program - Academic Institution

SOURCE(S) OF FUNDING

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program

GUIDELINE COMMITTEE

Practice Guidelines Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Authors: Jill Addison-Needles, RN; Micky Gonzales, RN; Kimberly Kosatka, RN; Michele Mckay, RN

Consultant: Stephanie Key, RN, PNP

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: None available

Print copies: Available from the University of Texas at Austin, School of Nursing. 1700 Red River, Austin, Texas, 78701-1499

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on July 28, 2005. The information was verified by the guideline developer on August 12, 2005.

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